REMARKS

Status of the Claims

Claims 1, 4, 5, 7-9, 11, and 13-21 are pending with Claims 1 and 21 being independent. Claims 11 and 13-20 have been withdrawn for consideration. Claims 1 and 21 have been amended. Support for the claim changes can be found in the original disclosure, for example, in paragraph [0084] and [0088] to [0093] of the published version of the application, Publication No. 2006/0055713, and therefore no new matter has been added.

Requested Action

Applicants respectfully request the Examiner to reconsider and withdraw the outstanding rejection in view of the foregoing amendments and the following remarks.

Statement of Substance of Interviews

Applicants gratefully acknowledge the courtesies extended by the Examiner to Applicants' representative during the telephone conversations between the undersigned and the Examiner on December 3, 2010, and December 13, 2010.

In the December 3, 2010 interview, Applicants' representative explained that Applicants understand Claim 1 to be patentable over the Ben David et al. and Abileah et al. citations because Claim 1 recites the display of chromatic colors in response to the application of a voltage applied to the first sub-pixel, while the Ben David et al. and Abileah et al. citations are understood to show a change in brightness of a pixel in response to a change in voltage. Moreover, in Ben David et al., a color filter is understood to be

required to change the color of the white pixel, while in amended Claim 1, there is no need for a color filter for the first sub-pixel, because this sub-pixel can change its color by itself in response to a voltage change. However if a color filter is also used, the color reproduction range is significantly widened. Applicants' representative also proposed to emphasize this feature by amending Claim 1 to recite the display of a plurality of chromatic colors by light passing through the liquid crystal layer of the first sub-pixel. The Examiner tentatively agreed that this concept appeared to be patentable over the Ben David et al. and Abileah et al. citations, pending further review once a formal amendment is filed.

The Examiner asked that Applicants further amend Claim 1 for the sake of clarity. As a result, Applicants forwarded another proposed amendment to Claim 1 in response to the Examiner's request. This amendment to Claim 1 is identical to the amendment to Claim 1 in the present Preliminary Amendment. On December 13, 2010, in a brief telephone conversation, the Examiner indicated that the second proposed amendment satisfied his request for improved clarity, and would still appear to overcome the outstanding rejection over the Ben David et al. and Abileah et al. citations.

Claim Rejections

Claims 1, 4, 5, 7-9 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2004/0174389 (Ben-David et al.) in view of U.S. Patent No. 5,499,126 (Abileah et al.).

In response, while not conceding the propriety of the rejection, independent Claims 1 and 21 have been amended. Applicants submit that as amended, these claims are allowable for the following reasons.

Independent Claim 1 relates to a color display element comprising a unit pixel which is comprised of a plurality of sub-pixels comprising a first sub-pixel and a second sub-pixel, the second sub-pixel having a green color filter, and a liquid crystal layer having a retardation modulated in accordance with a voltage being located in each of the sub-pixels. The color display element has a means of applying a voltage to each of the sub-pixels.

Claim 1 has been amended to recite that the liquid crystal layer of the first sub-pixel changes the color of light passing therethrough in response to a change in voltage applied thereto in a first-sub-pixel, chromatic-modulation voltage range, which modulates the retardation of the liquid crystal layer of the first sub-pixel.

Claim 1 has also been amended to recite that the liquid crystal layer of the first sub-pixel changes the brightness of light passing therethrough in response to a change in voltage applied thereto in a first-sub-pixel, brightness-modulation voltage range, which modulates the retardation of the liquid crystal layer of the first sub-pixel.

Claim 1 has further been amended to recite that plural chromatic colors of light including red and blue and not including green pass through the first sub-pixel in response to the changing the applied voltage within the first-sub-pixel, chromatic-modulation voltage range.

In addition, Claim 1 has been amended to recite that the liquid crystal layer of the second sub-pixel with the green color filter changes the brightness of light passing therethrough in response to a change in voltage applied thereto in a second-sub-pixel, brightness-modulation voltage range, which modulates the retardation of the liquid crystal layer of the second sub-pixel, wherein the light passing through the liquid crystal layer of

the second sub-pixel is achromatic when the voltage is in the second-sub-pixel, brightness-modulation voltage range.

By this arrangement, there is no need for a color filter for the first sub-pixel, because this sub-pixel can change its color by itself in response to a voltage change. Moreover, if a color filter is also used, the color reproduction range can be significantly widened.

In contrast, the Ben David et al. and Abileah et al. citations are not understood to disclose or suggest that the liquid crystal layer of a first sub-pixel changes the color of light passing therethrough in response to a change in voltage applied thereto in a first-sub-pixel, chromatic-modulation voltage range, which modulates the retardation of the liquid crystal layer of the first sub-pixel, where plural chromatic colors of light including red and blue and not including green pass through the first sub-pixel in response to the changing the applied voltage within the first-sub-pixel, chromatic-modulation voltage range, as recited by amended Claim 1.

Rather, the Abstract and paragraph [0059] of the Ben David et al. publication are understood to disclose that a) the light emitted from light source 212 of Fig. 2B is modulated in intensity by LC 214, b) the light after passing through the LC 214 and before entering the color filter array 216 is colorless and is a gray-level image, indicating that the LC of the Ben David et al. citation changes only the luminance, and not the color of light, and c) light from a sub-pixel viewed by a user of the LC sees light only of the color of the color filter provided for that sub-pixel, so that, for example, when the user views a sub-pixel associated with a magenta color filter ("M" in Figs. 12A and 12B), the user sees only magenta light from that sub-pixel. As a result, even though magenta is a combination of

red and blue, the sub-pixel M does not display red or blue depending on voltage, but displays only one color: magenta. In contrast, the first sub-pixel of Claim 1 can change its color and does not require a filter to perform that function. In the Abileah et al. citation, similar to the Ben David et al., one sub-pixel is understood to display only one color of a color filter due to the use of luminance modulation and the lack of hue modulation. Thus, Applicants understand these citations to disclose that pixels: are luminance modulated without being hue modulated; derive their color from the use of a color filter; and do not change their coloration with a change in voltage, while amended Claim 1 recites that a first sub-pixel employs retardation modulation to vary both luminance and color.

Since amended Claim 1 recites at least two features not understood to be disclosed or suggested by the Ben-David et al. and Abileah et al. citations, Applicants submit that the Office has not yet satisfied its burden of proof to establish a *prima facie* case of obviousness against amended Claim 1. Therefore, Applicants request that the rejection of Claim 1 be withdrawn. And because Applicants have amended corresponding method Claim 21 in a corresponding manner, Claim 21 is submitted to be allowable for corresponding reasons. Therefore, Applicants request that the rejection of Claim 21 be withdrawn.

The dependent claims are also submitted to be patentable, due to their dependency from the independent base claims, as well as due to additional features that are recited. Individual consideration of the dependent claims is respectfully solicited.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the pending claims are allowable over the art of record, and that the application is in condition for allowance.

Favorable reconsideration and early passage to issue of the application are earnestly solicited.

The Commissioner is hereby authorized to charge any fee which may be deemed necessary in connection with this paper to Deposit Account No. 06-1205.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

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